

Ebru: The Art of Marbling

TITLE

EBRU: The Art of Marbling

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INTRODUCTION

Students will learn a traditional Turkish art form, EBRU (paper marbling). Ebru is formed by placing dyes to draw patterns on pre-treated water with “size”. The Ebru artist then gently places paper on the surface (of the water) to absorb the colors, lifting it away, revealing a unique design.

Traditional Turkish Ebru artist use natural dyes from the earth that do not fade in light and are not soluble in water. In order to float these dyes on the surface of the water gall is added. A natural material, gall, comes from large cattle or other animals, and is a surface-active substance that creates surface tension so the dyes do not sink to the bottom of the tray of water.

Ebru artists make their brushes themselves. These brushes are made by fixing horsehair around a rose branch of various length and thickness which will be durable, flexible and light. The choice of a rose branch handle is because they have antiseptic properties which prevent the development of mould. Thus the use of gull, which is mixed with water, which engenders bacteria thus the production of mold.

Gum Tragacanth, which is an organic glue formed in the stem of some plants grown in Turkey, Iran, Afghanistan, and other Caucasus regions. This substance has to be hand harvested and prepared through a series of soakings, filtering, and dissolved into the water base for the paper marbling process.

Another important tool every Ebru artist makes is his/her own combs. These are made from thin wires, fine nails or needles fixed at even intervals on a piece of wood or cardboard. The length of the wood needs to be a little shorter than the length or width of the tray.

Drawing tools, such as a bradawl, knitting needle, nail, large sewing needle, can carry the dye or paint to the water and help making different patterns to form images, such as flowers.

Many Ebru artists allow the abstract element of the layered paints to speak for themselves, whereas, others draw directly on the random background to produce a recognizable design such as a tulip. Colors and textures combine and weave together to make a one-of-

a-kind, intricate design.

The oldest marbling example is located in the Palace of Topkapi and thought to be from 1447. Most of these earlier examples are created by anonymous artists. We do know the art of marbling, like many other Islamic arts, developed in dervish lodges. This ancient craft is thought to have been invented in the thirteenth century Turkistan then spread to China, India, Persia, and Anatolia. There were many uses for this decorative marbled paper including imperial decrees, official correspondences, background paper for calligraphy, and to decorate books. Today you will still see books with marbling covers, inside covers, and paper edges; background for calligraphy paper; notecards; gift cards; even lamp shade covers. Turkey remained the center of marbling for many centuries teaching future master's in the art by means of the apprentice system, which is still in practice today.

In an article, [Designs of Faith](#), written July 31, 2013 by the Tucson meet Yourself staff, an interesting deeper meaning attached itself to the art of Turkish Marbling. The holy month of Ramadan, which began the 29th of June this year and ended the evening of the 28th of July, is a time of prayer, fasting, and getting one's life back in balance. During this time of reflection devote Muslims try to give up bad habits, pray more, and read the Koran.

At Tucson Meet Yourself, two master artist formally from Turkey, Mustafa and Mine Calik, demonstrate Ebru (the art of Marbling) during this time of devotion of Ramadan.

Caliks states that Marble art is an art of faith. "In Ebru, when we use the second color, it doesn't destroy the first color — It is just like finding a way of living together in a harmony," says Mustafa. "It is said by many Ebru artists that patience, love and devotion are the most necessary skills to master in this art; it is not as easy as it looks."

Mustafa Calik feels Ebru strikes a "balance between interdependence and the freedom to express what makes us all unique".

Mustafa explained the symbolism of using rose branches, which represent love and peace, and the dyes from the ground, which represents generosity and being humble. "The tulip design represent Allah (God) and the rose represents our Prophet Muhammad (peace be upon Him)," Mustafa further explains.

Both Mine and Mustafa share their deep appreciation and love of this timeless Ebru art in the "spirit of gratitude, balance and faith".

LEVEL

6th Grade Art classes, who will teach the art of Ebru to the rest of the 6th Graders during their History classes. Montana covers World History during 6th grade and Lockwood School plans to develop a 6th grade unit on Turkey.

OBJECTIVES

Students will study the art work of another culture, past and present.

Students will explore the process Ebru, Turkish Paper Marbling.

Students will use their Paper Marbled Design as a background for a calligraphy project.

Art students will collaborate in small teams to set up marbling stations to teach fellow 6th graders the art of Paper Marbling.

CONNECTIONS TO STANDARDS

List the state, national, or district standards you will address in teaching this lesson. If applicable, describe any other curricular themes you will touch on in this lesson.

Lockwood School Curriculum:

National Standards for Visual Arts

4. Content Standard: Understanding the visual arts in relation to history and cultures

Achievement Standard:

Students

a. know and compare the characteristics of artworks in various eras and cultures

5. Content Standard: Reflecting upon and *assessing the characteristics and merits of their work and the work of others

Achievement Standard:

Students

a. compare multiple purposes for creating works of art

b. analyze contemporary and historic meanings in specific artworks through cultural and aesthetic inquiry

c. describe and compare a variety of individual responses to their own artworks and to artworks from various eras and cultures

Montana State Standards for Arts Education

1.2. Students will select a variety of materials and sources to demonstrate a specific art form.

1.4. Students will collaborate with others to make artistic choices.

4.3. Students will develop and apply criteria for evaluating quality and effectiveness of the work of art.

TIME

One Week time period.

MATERIALS

Carageenan

Alum

Marbling Gall

Blender

Rakes

Combs

Bradawl

Rose handle/Horse hair brushes

Plastic Broomstraw (rubber bands to hold them together)

Eye Droppers in place of brushes

Scraper Stick

Paper Towel

Pre-Cut Newspaper

Trays (9 x 12 cake pans work well)

Golden airbrush paints (University of Montana Bookstore: 1-888-333-1995)

Phthalo blue
Phthalo green
Naphthol red (light)
Quinacrodon magenta
Hansa yellow (medium)
Carbon black
Titanium White

Small canning jars with lids
Paper (any absorbent paper) Texoprint paper, watercolor paper, copy paper to test colors
Drying Rack (printmaking rack or use a folding laundry rack)
Protect for work area
Old work shirts or aprons

Broomstraw: A bundle of plastic black broomstraw (50 strands) can be wrapped tightly together with a rubber band.

Horsehair Brushes: Brushes of various thickness and length are traditionally made of horsehair and rose branches.

Combs: small finishing nails need to be hammered in a thin length of wood slightly shorter than the water pan.

Alum: every sheet of paper to be marbled must be coated with alum. This acts as a binder to fix the colors permanently to the paper. Make sure the alum is pure aluminum sulphate as the other types may harm your paper. Alum is not a dangerous chemical, but it should be kept out of reach for children. If you have older students help prepare the solution, gloves could be worn, and students supervised.

Put 1 teaspoon of alum into 1 cup of water. Stir for 2 to 3 minutes, till the alum is dissolved. Mix one-third cup alum to one gallon of water for a larger quantity. Before applying the alum make sure to mark one side of the paper that is NOT to receive the alum. Use a small sponge to wipe across the paper then go back across it the other way. Your paper should be dampened, not wet. Lay each paper flat to dry.

This process of applying the alum to paper can be done a day or two ahead of time. After a few days the paper will oxidize and start to lose their alum and need to be redone.

Marbling Gall: A wetting agent that makes the colors spread on the surface of the size. Not all colors need it but if a color isn't spreading, or is sinking, give it a drop or two of gall. This is not a traditional Ox Gall from a cow. Gall serves as a kind of glue and prevents the colors from mixing with each other. Gall, with its adhesive character, helps the dye cling to the paper. Many feel gall is the key in the process of marbling. Too much gall will thin the colors and not enough results in lesser dispersion of color on the surface. A very delicate balance plays in the amount of use of this wetting agent. Practice makes perfect. Gall must be added by use of a medicine dropper.

Viscosity Improvers (Base): Several materials have been used to prepare the viscosity of the fluid so it is higher than the water to give a base by which patterns and movements can be controlled. Badderlocks, linseed, quince seeds, okra, celluloses (methyl-cellulose wallpaper fixer). Turkish marbles have consistently used gum tragacanth and continue to use it today. This organic glue comes from a plant that grows wild in mountainous regions in Turkey, Iran, and Afghanistan. The sap which comes from deliberate knife scratches dries up in the sun and forms the mass of the gum, which is harvest a couple of week later.

Gum tragacanth can be bought in special spice shops. This gum substance needs to be soaked in warm water for two days.; 8 - 10 grams to 2 liters of water. To preserve the solution it needs to be kept in a cool place. Finally, this soaked solution needs to be filtered several times through a cheese cloth or lady's nylon to collect the larger undissolved residue to be re-soaked.

Carrageenan: an extract from the seaweed Irish moss, a non-toxic food product. This powdered gelatin can be mix with water in a blender to form the "size" on which the colors float. Basic proportions are 2 tablespoons of Carrageenan to 1 gallon of water. Directions - Mix 1 tablespoon of Carrageenan to about 3 cups of warm tap water

in a blender for 60 seconds. Pour into a bucket and repeat with a second tablespoon of Carrageenan. Pour into the same bucket. Then add enough water to make a total of 1 gallon and stir. For larger quantities, repeat procedure using same proportions. Fill marbling tray to about 1.5" deep and allow to rest for 12 hours.

Supplies:

You can always get online and buy a Marbling Kit by Jacquard (contains Jacquard Alum, Methocel, six 1/2 oz. Marbling colors) or Jacquard Airbrush & Marbling Colors (47 choices)

Dharma Trading Co.

1-800-542-5227

<http://www.dharmatrading.com/> (click "marbling" on the left side on the menu)

Another favorite site to order from is:

Marble Art

2462 NW 38th Street

Oklahoma City, OK

73112

<http://marbleart.us/index.htm>

Marbling@aol.com

1-405-949-1239

Most art supplies stores will have most of what you need

dickblick.com

saxarts.com

School Specialty Marketplace

University of Montana Bookstore: 1-888-333-1995

Carrageenan

Golden Air Brush Paints

PREP WORK

You will need to buy or make homemade brushes and combs. Traditional brushes in Turkish Paper Marbling are made with rose stem handles and horsehair bristles. Another way to sprinkle the paint onto the pretreated water called "sizing" is with wrapped bundles of broomstraw. The natural broomstraw is more traditional but the black plastic broomstraw doesn't break off, get waterlogged or limp, and one can wash these plastic strands off and reuse with different colors.

Just as one can make or buy special brushes to be used for paper marbling, one can make or buy combs. I've bought supplies at marbleart.us/MarblingSupplies.htm. I'd encourage you to make a set of brushes and combs to experience a more authentic experience for yourself. If you have dozens of students to experience marbling you might consider kits that can purchase. dickblick.com has a starter kit or classroom pack by Jacquard that might work for you.

Pretreating the paper you will use ahead of time is necessary. To simply test how the "sizing" and paints work copy paper can be used. But when marbling with acrylics, the paper must be coated with mordant, an alum solution, to make the paint adhere to it. For a few dozens sheets add 2 level tablespoons alum (aluminum sulphate) to 2 cups warm water and stir until dissolved. Use a sponge to apply this solution evenly over one side of the paper (mark the other side to prevent confusion when lifting the design).

PROCEDURES

1. Arrange your workspace by protecting your table with newspaper. Have some old towels or paper towel handy. A large tub of water or deep sink with sponges should be near by. Cover yourself and those participating with aprons or old work shirts. Set up the drying rack, clothes line, or simply newspaper on the floor for your marbled paper to dry on.

2. Place a 1/2 inch of paint in a glass jar (small canning jars with lids would well), thin with water to the consistency of milk. Add a couple of drops of gall to the paint and stir with the broomstick bundle or the horsehair brush. Use one bunch of broomstick for each color. Keep this brush with the appropriate color you just mixed. Continue to mix all the desired colors in their own jars. Repeat the process of thinning with water, gall added and mixed with a separate brush or broomstick bundle for each color. Set these prepared jars near the water pan of “size”.
3. Arrange your other tools (awls, needles, combs) near your water tray in easy reach. Sheets of newspapers, cut to size of the water tray, need to be close at hand.
4. Before tapping color onto the water surface, make sure there are no bubbles. Life bubbles off with a sheet of newspaper or pop any with a pin.
5. Lift out the desired color you want to use. A dark color works best to use first for a base color. Holding the brush horizontally over the pan, tap with your finger to splatter small drops of paint onto the surface. If the paint doesn't spread or very slowly add another drop of gall to the paint. If the reverse happens and the paint spread too quickly thus thinning the color out, add more paint to the jar. Getting the paint/gall ratio for each color takes some experimenting. Continue gently tapping a variety of splatter of color over the entire surface.
6. Add other colors using the same technique. One could also use the eye dropper to place the next color choice deliberately where you want them. Note: the new color, on top of the one beneath, should spread out slightly crowding the first color and begins to create a pattern. As additional colors are added, the base color will squeeze into thin veins. Four colors should be adequate to create the classic Turkish Stone Marbling. This style of marbling is the oldest and basis for all the other marbling patterns. There is no limitations to this style of pattern.
7. To lift the pattern created, pick up a sheet of the prepared paper by opposite corners, keeping the marked side up and treated side down. Gently lay the paper diagonally on the paint (floating on the top of the water) laying the held edges last. Smooth down the top of the paper with a bradawl tool, nail, or small stick. Be sure to not touch the surface the water with your fingers, as human skin contains fats which are surface-active substance, and these form surface tension which will prevent the colors from spreading. Make sure no air bubbles are under the paper, as the paper will not be able to pick up the paint design. Carefully pick up the sheet, by the top corners, and put it away from the size (water) toward you letting it rub across the edge of the tray.
8. Lay the marbled paper, paint size up, on a shallow tray (masonite, styrofoam, or plastic cutting board) so water can run over it. Too strong a rinse will remove some of the paint. If you're using a tub and sponge, squeeze water over the marbled pattern rather than sponging it, to avoid lifting the paint. Go back to the tray use some paper towel to wipe off the edge of the tray.
9. Next, come drying the print. Flat on newspaper, draped over a drying rack, flat on a stiff surface and then placed in a printmaking wire rack. One can even clip them onto a clothes line (newspaper beneath incase of dripping). Once the sheets are dry, wrinkles can be ironed out on a low setting with a piece of muslin or cotton between the iron and paper.
10. You will need to clean the prepared water (size) by laying a piece of precut newspaper on the top of the water. Pull the newspaper toward you along the pan edge and throw this away. Re-wipe the edge of the tray as you did with the marbled paper.
11. Clean up can be done with water and wiping off all tools. If one uses soap it could leave a residue which will affect other prints so avoid soap.

ASSESSMENT

Rubric Grade Sheet

Turkish Stone Marbling

Name _____
Class Period _____ **Table #** _____

STUDENT EVALUATION

Rate your self from 1 to 5 with 5 being outstanding.

How well did you layer the paint on the water (“size”) creating a Turkish Stone pattern?

How would you rate the way you laid the paper on the basin to lift the colored pattern?

How would you rate the construction of your homemade brush?

How would you rate the construction of your homemade “comb”?

How would you rate your set up/clean up procedure for this project?

Student Grade

TEACHER EVALUATION

Rate your self from 1 to 5 with 5 being outstanding.

Objectives of lesson were successfully met.

Technique: skillful and appropriate ways of using art media.

Creative approach of subject matter, media and technique.

Student's self evaluation.

Grade for the Turkish Stone Marbling Project

EXTENSION IDEAS

A natural extension of this activity would be for the art classes that have learn paper marbling to design their own centers for this activity and teach the entire 6th grade students from your school. Our school has around 150 6th graders who all take World History. Thus, teaming up with the history teacher would allow a collaborative unit on Turkey with a hands-on lesson (given by the art students themselves) on Paper Marbling.

Another combination of art lessons would be to follow up this lesson with a Calligraphy lesson. Turkish calligraphers used marbled paper to write beautiful words in Arabic.

The National Arts Standards incorporates cultural diversity and states, “ The visual, traditional, and performing arts provide a variety of lenses for examining the cultures and artistic contributions of our nation and others around the world. Students also need to understand that art is a powerful force in the everyday life of people around the world, ...the intricate calligraphy of Japanese and Arabic artists are, after all, more than simply cultural artifacts; they are part of the world’s treasure house of expression and understanding. As such, they belong to every human being.”

SOURCES

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Art of Ebru- Rumi Forum

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<http://www.tucsonmeetyourself.org/designs-of-faith/>

TCF: Turkish Cultural Foundation

<http://www.turkishculturalfoundation.org>

World Affairs Council. Turkey in our World Today: A Model for Democracy In the Muslim Middle East?

https://www.world-affairs.org/wp-content/uploads/2012/03/webturkeypacket2011_0.pdf

The Secrets of Paper Marbling Revealed

Will Jackson Shares the Secrets of Paper Marbling in this Comprehensive Step-by-Step Demonstration

<http://www.danielsmith.com/>

Marbling Basics: A Step-by-Step Guide to Marbling Fabric

<http://www.dharmatrading.com/techniques/marbling-instructions.html>

The Ancient Art of Marbling on Paper and Fabric

<http://marbleart.us/index.htm>